MYCOTAXON

ISSN (print) 0093-4666 (online) 2154-8889 Mycotaxon, Ltd. ©2020

July–September 2020—Volume 135, pp. 631–635
https://doi.org/10.5248/135.631

Hymenochaete longisterigmata sp. nov. from India

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Abstract—A new hymenochaetoid species, *Hymenochaete longisterigmata,* is described from Himachal Pradesh, India.

Keywords—*Basidiomycota*, *Hymenochaetales*, *Hymenochaetaceae,* Himalaya

Introduction

During the 2014 fungal forays conducted in the Narkanda area of district Shimla, Himachal Pradesh, India, Navpreet & Dhingra collected a fungal specimen on the branch of a living tree of *Picea smithiana*. This fungus was again collected (2016) in the Jalori Pass area of district Kullu, Himachal Pradesh, India, by Navpreet & Avneet on the branch of a living *Quercus semecarpifolia*. Based on the comparison of morphological characters (Cunningham 1963, Sharma 1995 & 2012, Natarajan & Kolandavelu 1998, Bernicchia & Gorjón 2010, Dai 2010, Kaur & al. 2015, Sharma & Mishra, 2015, Mycobank 2019), we referred the specimens to *Hymenochaete* Lév. (*Hymenochaetaceae*) and close to *H. corrugata* (Fr.) Lév. based on its resupinate, adnate basidiomata, heavily cracked hymenial surface, and presence of abundant setae with encrusted apices. We now propose the fungus as a new species *H. longisterigmata,* named in reference to its exceptionally long sterigmata.

Materials & methods

The present study is based on fungal samples collected during the field trips conducted in Narkanda (District Shimla) and Jalori Pass (District Kullu) forest areas of Himachal Pradesh during September 2014 and 2016. Colours terms follow Kornerup

& Wanscher (1978). After removing any extraneous matter, we dried the specimens in the sun or with a portable electric drier. The dried specimens were deposited at the internationally recognized herbarium of Department of Botany, Punjabi University, Patiala, India (PUN). The arrangement, size and shape of hyphae, sterile structures, basidia, and basidiospores were studied by making crush mounts and free hand sections in water, KOH (3%/5%/10%), 1% Congo red, 1% phloxine, cotton blue (15 in Lactophenol), and Melzer's reagent. We examined the material microscopically at 100×, 400× and 1000× magnifications using a compound microscope and drew structural line diagrams on white paper sheets with the aid of a camera lucida. Photomicrographs of important structures were taken using a Nikon 80i Eclipse microscope.

Taxonomy

Hymenochaete longisterigmata Nav. Kaur, Avn.P. Singh & Dhingra, sp. nov. PLATE 1

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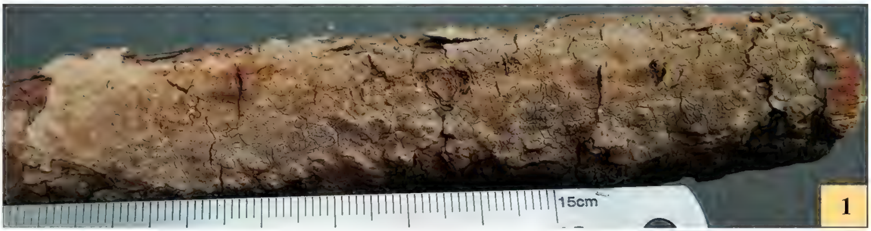
Differs from *Hymenochaete corrugata* by its thick–walled hyphidia, its larger basidia with long sterigmata, and its broadly ellipsoid basidiospores.

TYPE: India, Himachal Pradesh, Shimla, Narkanda, about 3 Km from Narkanda towards Baghi, on branch of living tree of *Picea smithiana* (Wall.) Boiss., 4 September 2014, Navpreet & Dhingra 9689 (**Holotype**, PUN).

ETYMOLOGY: The specific epithet refers to the long sterigmata.

Basidiomata annual, resupinate, ≤2 mm thick in section, adnate, soft and corky when collected, hard and corky after drying; hymenial surface smooth to somewhat aculeate under lens, cracked, greyish orange to greyish brown when collected, no significant change after drying; margins thinning, indeterminate, paler concolorous, sterile portion ≤0.5 mm. Hyphal system monomitic. Subicular hyphae brown, heavily encrusted, up to 6.3 µm wide; subhymenial hyphae subhyaline to yellowish brown, up to 3.4 µm diam. Setae subulate, apices straight with crystalline encrustation, dark brown, abundant, thick–walled, 68–92 × 11.4–20 µm; arising from the subhymenium, extending through hymenium, projecting ≤52 µm above the hymenium. Hyphidia subfusiform with moniliform apices, yellowish brown, abundant, thick–walled, 20–34 × 4.2–5.2 µm; arising from the top of subhymenium and base of hymenium. Basidia narrowly clavate to subcylindrical, subhyaline, thin–walled, tetrasterigmate, 22–30 × 2.8–4.6 µm; sterigmata ≤17.2 µm long.

PLATE 1. *Hymenochaete longisterigmata* (holotype, PUN – Navpreet & Dhingra 9689). 1. Basidiocarp showing hymenial surface; 2. Basidiospores; 3. Vertical section through basidiocarp showing: a. basidia; b. hyphidia; c. setae; d. subhymenial hyphae; 4. Subicular hyphae; 5. Basidium; 6. Setae.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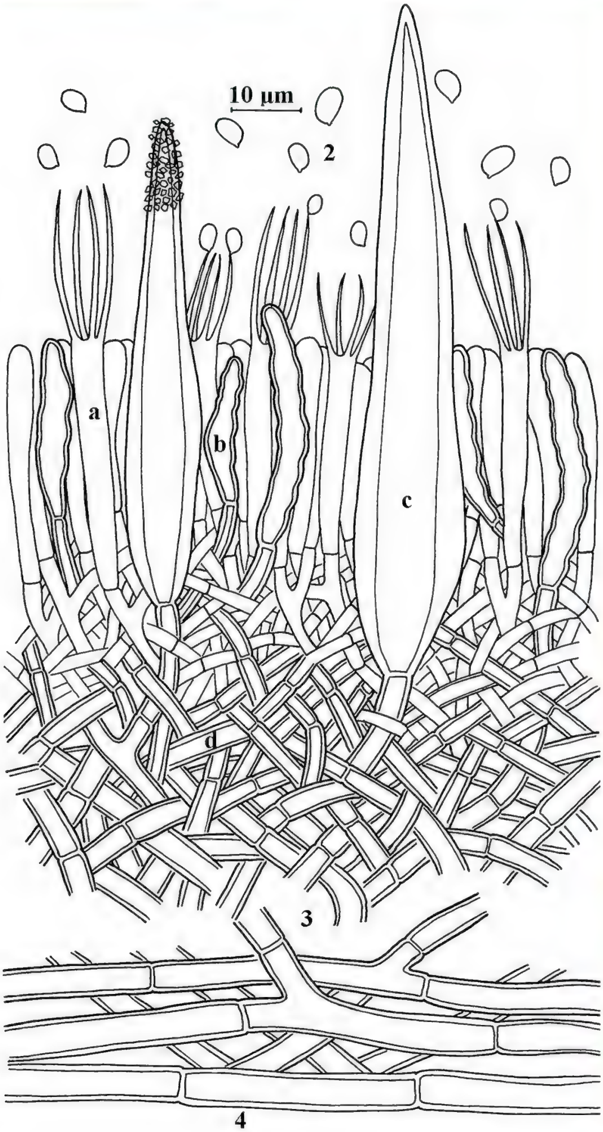
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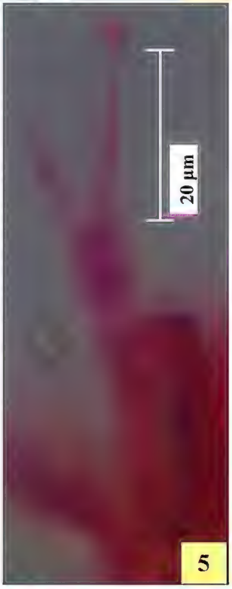
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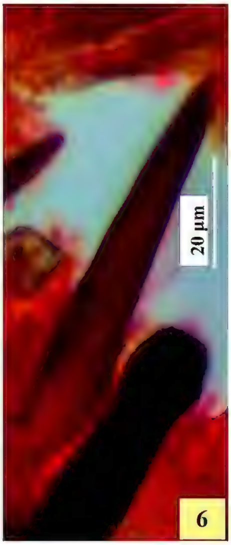
20 µm
6

Basidiospores broadly ellipsoid, subhyaline, smooth, thin–walled, 4–5.1 × 2.8–3.4 µm, inamyloid, acyanophilous.

ADDITIONAL SPECIMEN EXAMINED: **INDIA**, **HIMACHAL PRADESH**, **Kullu**, about 3 km from Jalori Pass towards Shoja, on branch of living tree of *Quercus semecarpifolia* Sm., 3 September 2016, Navpreet & Avneet 9688 (PUN).

Discussion

Hymenochaete (*Hymenochaetaceae*) is a widespread genus with c. 350 published species names and c. 150 currently accepted species (Kirk & al. 2008, Index Fungorum 2019, MycoBank 2019). The earliest record of this genus from India was by Montagne (1842), who described *Stereum rheicolor* [≡ *H. rheicolor*] from Gudalur, Nilgiri Hills, Tamil Nadu. Until our report, 40 *Hymenochaete* taxa were reported from India.

Wagner & Fischer (2002) inferred phylogenetic relationships from DNA sequence data for several *Hymenochaete* species. Their phylogeny supporting traditional *Hymenochaete* species in two genera, they described the new genus *Pseudochaete* T. Wagner & M. Fisch. The two genera are not easily distinguished by morphology alone. The new species described here has not been sequenced and is therefore referred to *Hymenochaete* s.l.

Acknowledgments

Thanks are due to Head, Department of Botany, Punjabi University, Patiala, for providing research facilities and University Grants Commission, New Delhi, for financial support under UGC DRS-SAP, DSA-I programme. We also thank Dr. Nils Hallenberg (Professor Emeritus, University of Gothenberg) for expert comments and peer review and Prof. B.M. Sharma (Department of Plant Pathology, COA, CSKHPAU, Palampur, India) for peer review.

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